Installing Ethernet Net Modules in ASN Platforms

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Bay Networks

Bay Networks

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Meets requirements of:

FCC Part 15, Class A
EN 55 022 (CISPR 22:1985), Class A <and Class B>
VCCI Class 1 ITE

Canada Requirements Only

Canada CS-03 Rules and Regulations

Note: The Canadian Department of Communications label identifies certified equipment. The certification means that the equipment meets certain telecommunications network protective operations and safety requirements. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above conditions may not prevent the degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

Canada CS-03 -- Règles et règlements

Note: L’étiquette du ministère des Communications du Canada indique que l’appareillage est certifié, c’est-à-dire qu’il respecte certaines exigences de sécurité et de fonctionnement visant les réseaux de télécommunications. Le ministère ne garantit pas que l’appareillage fonctionnera à la satisfaction de l’utilisateur.

Avant d’installer l’appareillage, s’assurer qu’il peut être branché aux installations du service de télécommunications local. L’appareillage doit aussi être raccordé selon des méthodes acceptées. Dans certains cas, le câblage interne du service de télécommunications utilisé pour une ligne individuelle peut être allongé au moyen d’un connecteur certifié (prolongateur téléphonique). Le client doit toutefois prendre note qu’une telle installation n’assure pas un service parfait en tout temps.

Les réparations de l’appareillage certifié devraient être confiées à un service d’entretien canadien désigné par le fournisseur. En cas de réparation ou de modification effectuées par l’utilisateur ou de mauvais fonctionnement de l’appareillage, le service de télécommunications peut demander le débranchment de l’appareillage.

Pour leur propre sécurité, les utilisateurs devraient s’assurer que les mises à la terre des lignes de distribution d’électricité, des lignes téléphoniques et de la tuyauterie métallique interne sont raccordées ensemble. Cette mesure de sécurité est particulièrement importante en milieu rural.

Attention: Les utilisateurs ne doivent pas procéder à ces raccordements eux-mêmes mais doivent plutôt faire appel aux pouvoirs de réglementation en cause ou à un électricien, selon le cas.

Canada Requirements Only *(continued)*

D. O. C. Explanatory Notes: Equipment Attachment Limitations

The Canadian Department of Communications label identifies certified equipment. This certification meets certain telecommunication network protective, operational and safety requirements. The department does not guarantee the equipment will operate to the users satisfaction.

Before installing the equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above condition may not prevent degradation of service in some situations.

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Canada Requirements Only *(continued)*

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About This Guide

Read this guide if you are responsible for installing a 10Base-T Dual Ethernet or 100Base-T Ethernet net module in a Bay Networks™ ASN™ platform. This guide describes how to

- Install a net module (Chapter 1)
- Interpret the LEDs on the net module (Chapter 2)

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Chapter 1
Installing a Net Module

To install an Ethernet net module in an ASN:

1. Remove the ASN component tray.
2. Attach the antistatic wrist strap.
3. Remove the filler brackets.
4. Remove a net module (if necessary).
5. Install the new net module.
6. Install the filler brackets.
7. Replace the component tray.

The following sections describe these steps.

Note: Experienced network operators can safely perform the user-serviceable procedures described in this book.

Removing the Component Tray

To remove the component tray:

1. **Power off the ASN.**
2. **Detach all cables from the ASN back panel.**
3. **Using a Phillips screwdriver, loosen the two captive screws that fasten the tray to the chassis (Figure 1-1).**
   a. **Pull the two captive screws and gently slide the tray out of the chassis just a few inches (Figure 1-1).**
   b. **Hold the sides and bottom of the tray to support it, and then slide the tray completely out of the chassis.**

      Try to keep the tray level as you slide it out.
4. **Place the tray on a sturdy work surface.**

Caution: Do not touch any components or boards in the ASN until you have attached an antistatic wrist strap. See the next section, “Attaching the Antistatic Wrist Strap.”

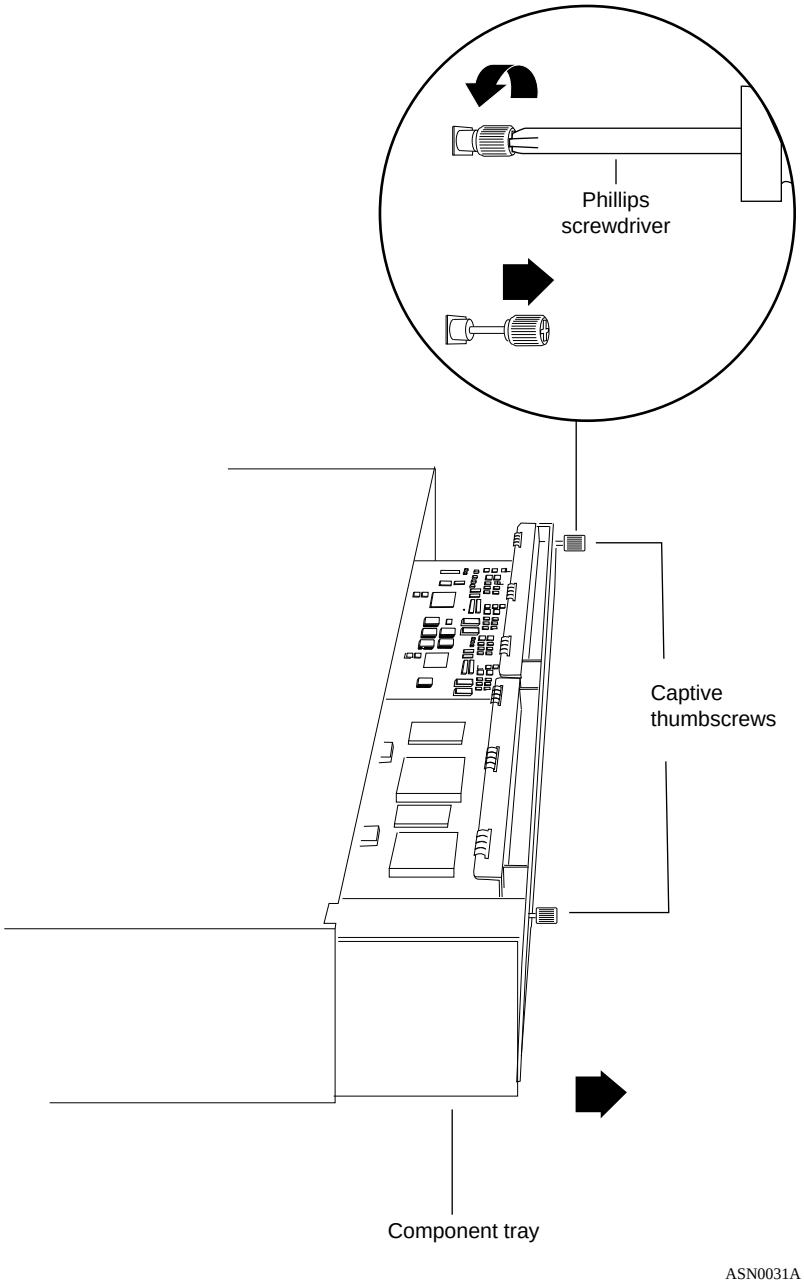

Figure 1-1. Removing the Component Tray

Attaching the Antistatic Wrist Strap

Your ASN comes with an antistatic wrist strap. The antistatic wrist strap directs the discharge of static electricity from your body to the chassis of the ASN, thereby avoiding discharge to sensitive electronic components. You must wear an antistatic wrist strap whenever you remove, install, or handle the net module.

Caution: Electrostatic discharge can damage hardware. Follow the procedure described here to protect your equipment from damage.

Attach the antistatic wrist strap as follows:

1. **Remove the strap, alligator clip, and cable from their package.**
2. **Attach (snap) the snap end of the cable to the wrist strap.**
3. **Place the strap around your wrist. Adjust the strap to ensure that the metal buckle inside the strap touches your skin.**
4. **Plug the jack at the other end of the cable into the opening on the alligator clip.**
5. **Attach the alligator clip to any unpainted metal surface on the component tray.**

Removing Filler Brackets

Filler brackets cover empty ASN net module positions and the openings above positions 1 and 3 (Figure 1-2). When you install a net module, you must remove the filler brackets not only from the position in which you want to install the net module, but also from the openings above positions 1 and 3.

Note: This manual refers to the end of the component tray where the net module ports are exposed as the "back end" of the tray. To perform maintenance tasks on the ASN components, you face the back end of the tray.

To remove a filler bracket, grasp its top edges. Then lift the bracket up and toward the front of the tray to release the metal tabs.

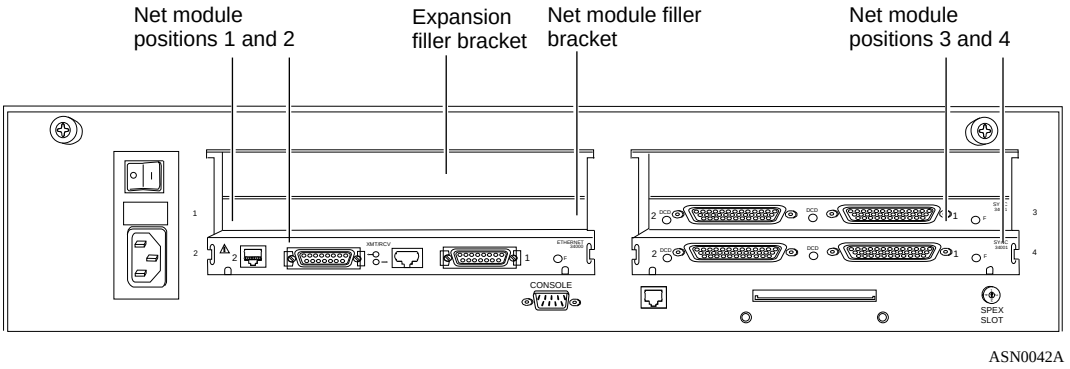

Figure 1-2. Locating Net Modules and Filler Brackets

Removing a Net Module

Read this section if a net module already occupies the slot you want to use. To remove a module from position 2 or 4 (Figure 1-2), you must first remove the filler bracket and net module (if any) above it. See the previous section, "Removing Filler Brackets."

Caution: Do not touch any components or boards in the ASN until you have attached the antistatic wrist strap.

To remove a net module:

1. **Grasp the handle on the net module. Use your thumb to push back the white retaining tab (Figure 1-3).**

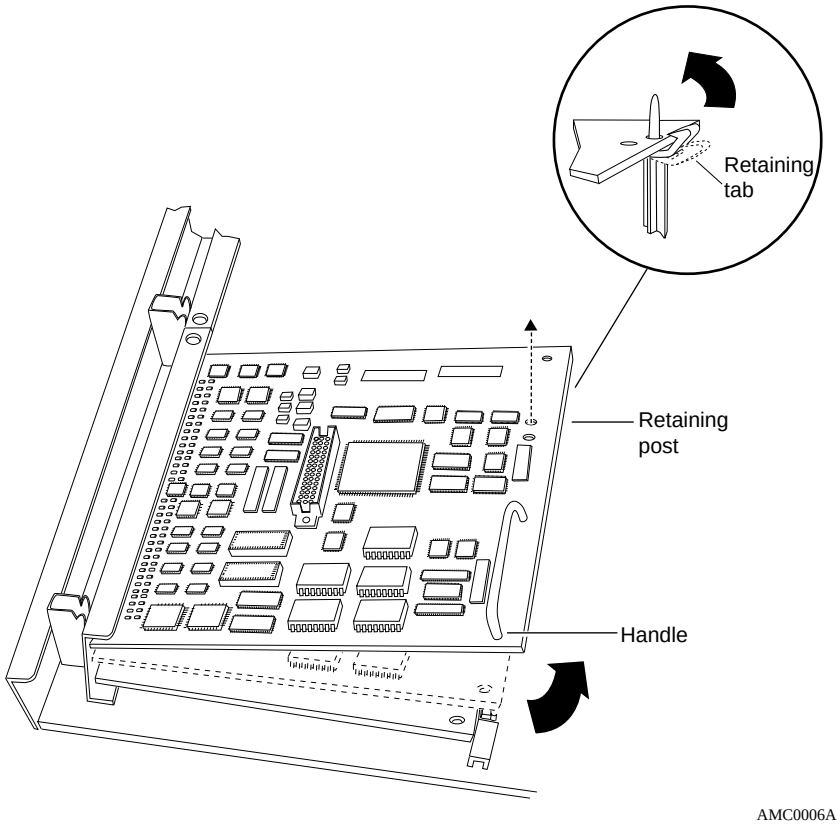

Figure 1-3. Preparing to Remove a Net Module

2. **Pull up to release the module from the connector (Figure 1-4).**

Caution: You must lift the module straight up. If you rock the module back and forth or side to side, you can bend the connector pins. Attempting to reinstall a net module with bent connector pins can damage the power supply.

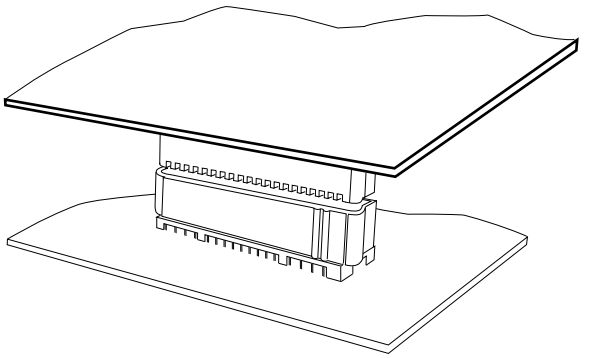

Figure 1-4. Removing a Net Module from the Connector

3. **Lift the module bracket up and toward the front of the tray to release it from the metal tabs that hold it in place (refer to Figure 1-3).**

Installing a Net Module

Note: To install a net module in a position from which you just removed a net module of a different type, you must first delete the old net module from the router's configuration file. Then install the new module in the chassis. For information, refer to *Configuring Routers* if you use router software or *Administration Guide* if you use BayStream software.

To install a net module:

1. **Align the slots at each end of the module bracket with the metal tabs in the net module position that you want to use (Figure 1-5).**

   Do not rest the module bracket on the metal tabs; doing so makes it difficult to align the module connector with the connector on the system board.

2. **Align the module connector with the connector on the system board. Make sure that the white retaining post on the system board goes through the hole in the net module (Figure 1-5).**

Note: If you accidentally turn the white retaining post on the system board, it will not go through the hole in the net module. In this case, turn the post so that its rectangular base is perpendicular to the net module connectors on the system board.

3. **Firmly press the handle on the net module so that the net module is secure in its connector on the system board. Make sure that the white retaining tab snaps into place.**

4. **Press down on the module bracket so that it rests on the metal tabs.**

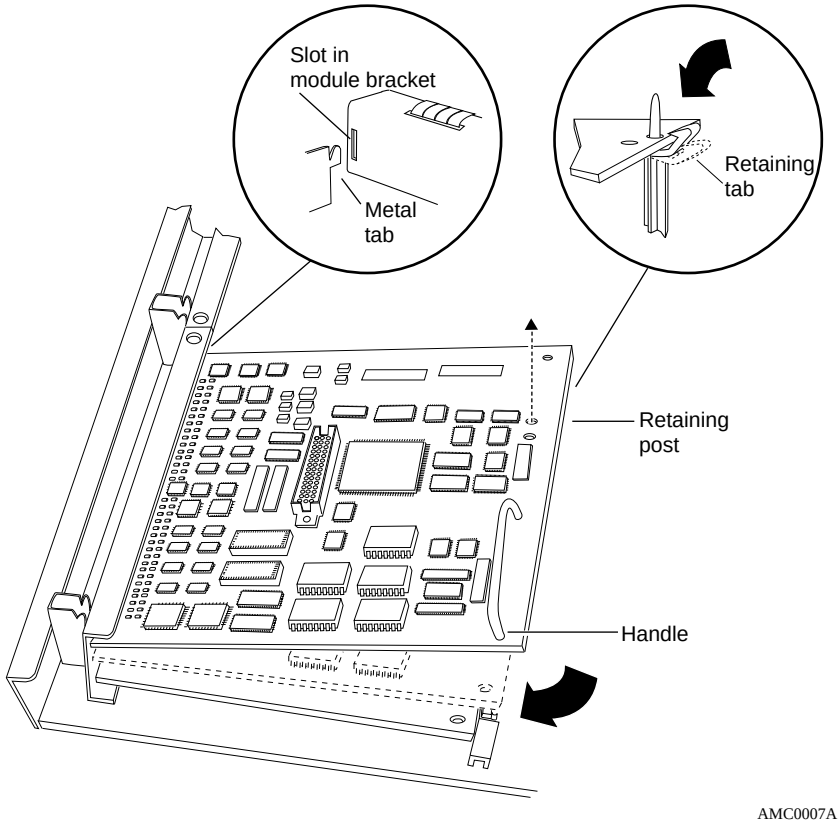

Figure 1-5. Aligning a Net Module

Installing a Filler Bracket

Install filler brackets in any unused net module positions. You must replace the filler brackets that fill the openings above positions 1 and 3.

Note: The filler brackets you use above positions 1 and 3 are different from those for positions 1 through 4. To fill the openings above positions 1 and 3, make sure you use the brackets labeled “Expansion Filler” (refer to Figure 1-2).

To install a filler bracket:

1. **Align the slots at each end of the bracket with the metal tabs of the position where you are installing the bracket (Figure 1-6).**

   Make sure that the edge of the bracket labeled “Top Surface” faces up.

2. **Position the bracket so that it rests on the metal tabs.**

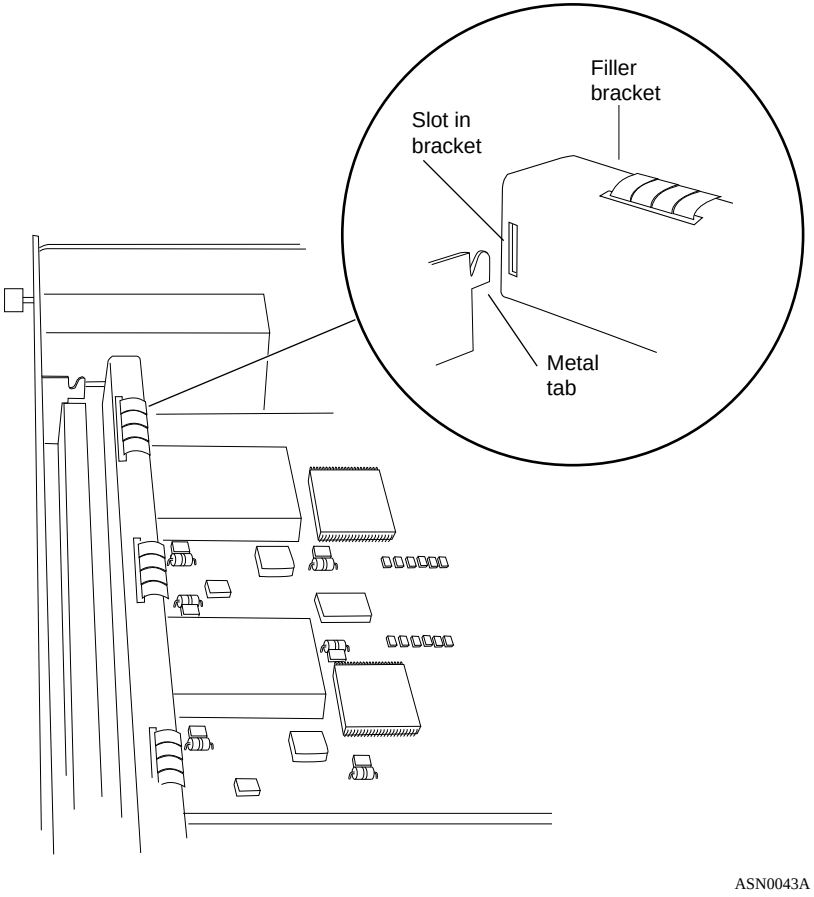

Figure 1-6. Installing a Filler Bracket

Replacing the Component Tray

Before you replace the component tray, remove the alligator clip of the antistatic strap from the chassis. Then remove the antistatic wrist strap from your wrist.

To replace the component tray:

1. **Gently slide the tray into the chassis.**
2. **Use a Phillips screwdriver to tighten the two captive screws that fasten the tray to the chassis (refer to Figure 1-1).**
3. **Reattach the cables to the proper connectors on the back panel.**

See Chapter 2 for information about the LEDs on the net module.

Chapter 2
Checking the Ethernet Net Module LEDs

This chapter describes the LEDs on the10Base-T Dual Ethernet and 100Base-T Ethernet net modules.

10Base-T Dual Ethernet Net Module LEDs

Figure 2-1 shows the 10Base-T Dual Ethernet net module.

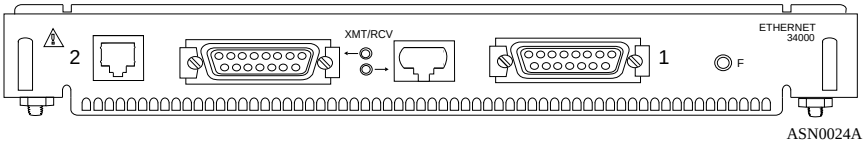

Figure 2-1. 10Base-T Dual Ethernet Net Module LEDs

Table 2-1 describes each LED.

Table 2-1. Functions of the 10Base-T Dual Ethernet Net Module LEDs

LED	Function
XMT and RCV (P1 and P2)	Indicate when Ports 1 and 2 are transmitting and receiving data. The P1 LED corresponds to the Attachment Unit Interface (AUI) and 10Base-T Port 1. The P2 LED corresponds to the AUI and 10Base-T Port 2.
F (FAIL)	Lights during power up, and might flash during diagnostic testing. The FAIL LED turns off once the diagnostics complete successfully and the router boots. The LED remains lit if the net module or any connector on the net module fails diagnostics. In this case, the DIAG LED on the ASN front panel will also be on.

100Base-T Ethernet Net Module LEDs

Figure 2-2 shows the 100Base-T Ethernet net module.

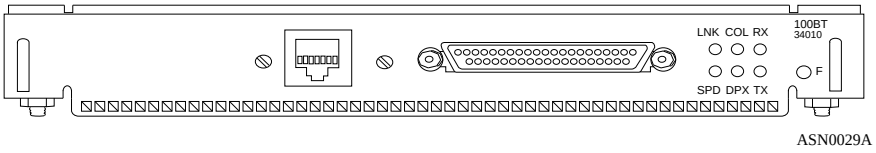

Figure 2-2. 100Base-T Ethernet Net Module LEDs

Table 2-1 describes each LED.

Table 2-2. Functions of the 100Base-T Ethernet Net Module LEDs

LED	Function
LNK	Indicates that the port has established a valid link with another node/repeater in either 10-Mb/s or 100-Mb/s mode.
COL	In half-duplex mode, this LED indicates that the port has detected an Ethernet wire collision. In full-duplex mode, this LED will not light because there are no collisions. In full-duplex with congestion-control mode, this LED lights when the net module is congested (and is therefore asserting flow control).
TX and RX	Indicate when the port is transmitting and receiving Ethernet traffic.
SPD	Remains lit when the port is in 100-Mb/s mode. The SPD LED does not light when the port is in 10-Mb/s mode.
DPX	Indicates that the port is in full-duplex mode and is sending and receiving data in either 10-Mb/s or 100-Mb/s mode.
F (FAIL)	Lights during power-up, and might flash during diagnostic testing. The FAIL LED turns off once the diagnostics complete successfully and the router boots. The LED remains lit if the net module or any connector on the net module fails diagnostics. In this case, the DIAG LED on the ASN front panel will also be on.